

MAGNETIC DECLINATION
CALCULATED ON:
03-17-16

Verticalbridge

NOTE TO GENERAL CONTRACTOR

NO WORK IS TO BE PERFORMED ON THIS SITE WITHOUT REVIEW OF THE APPROVED STRUCTURAL ANALYSIS. IF ANY DISCREPANCIES ARE FOUND THE GENERAL CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING. AT NO TIME WILL ANY ADDITIONAL ANTENNAS BE INSTALLED WITHOUT WRITTEN CONSENT FROM TOWER ENGINEER.

STRUCTURAL NOTE:

ADVANTAGE ENGINEERS IS NOT RESPONSIBLE FOR DESIGN OR STRUCTURAL CERTIFICATION OF NEW ANTENNA MOUNTS REQUIRED FOR THE INSTALLATION OF THE PROPOSED EQUIPMENT ASSOCIATED WITH THIS PROJECT. PLEASE REFER TO THE STRUCTURAL ANALYSIS COMPLETED BY OTHERS FOR ALL STRUCTURAL INFORMATION RELATED TO THE ANTENNA MOUNTS.



Verticalbridge
750 PARK OF COMMERCE
DRIVE, SUITE 200
BOCA RATON, FLORIDA 33487
(561) 948-6367

advantage engineers
520 FELLOWSHIP ROAD SUITE A-106
MOUNT LAUREL, NEW JERSEY 08054
PHONE: (856) 231-0800
www.advantageengineers.com

| SCHEDULE OF REVISIONS | | | |
|-----------------------|----------|---------|------------------------|
| 3 | 10-03-16 | LCW | FINAL 2D's |
| 4 | 09-28-16 | LCW | FINAL |
| 3 | 09-16-16 | LCW | FINAL |
| 2 | 08-29-16 | JMC | CLIENT REVISIONS |
| 1 | 08-26-16 | JMC | CLIENT REVISIONS |
| REV NO. | DATE | DRAFTER | DESCRIPTION OF CHANGES |
| DRAWN BY: LCW | | | |
| CHECKED BY: TA | | | |
| SCALE: NOTED | | | |
| JOB NO: M880140.00 | | | |

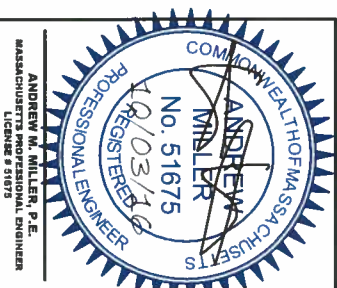
DRAWING TITLE:
TITLE SHEET

DRAWING SHEET:

T-1

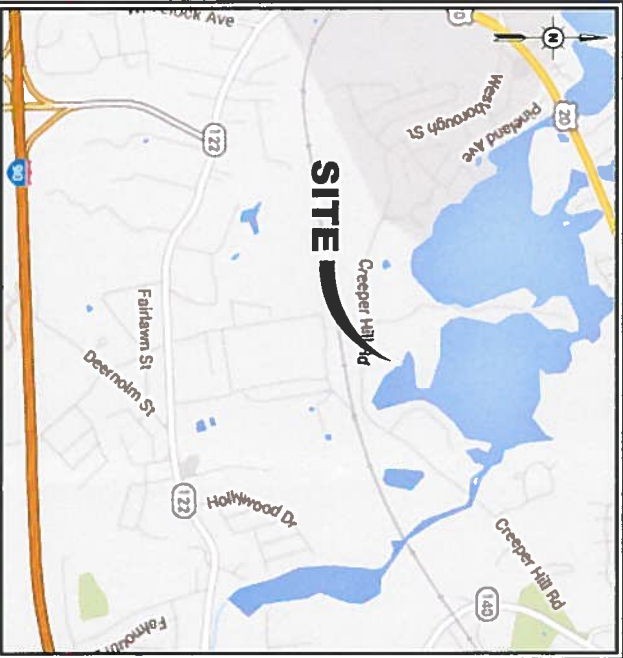
SHEET NUMBER:
1 OF 7

SITE INFORMATION:
**SITE NAME:
US-MA-5025
GRAFTON
SITE ADDRESS:
104 CREEPER HILL ROAD
GRAFTON,
MASSACHUSETTS 01536
ASSESSOR'S MAP:
MAP 17
LOT 08A
JURISDICTION:
TOWN OF GRAFTON
WORCESTER COUNTY, MA**



SITE NAME: GRAFTON US-MA-5025 104 CREEPER HILL ROAD GRAFTON, MASSACHUSETTS 01536

NEW MONOPOLE AND GROUND EQUIPMENT WITHIN THE PROPOSED LEASE AREA



AREA MAP

GRAFTON, MASSACHUSETTS
SCALE: 1" = 1000'

DIRECTIONS:

HEADING FROM BOSTON AIRPORT: HEAD NORTHWEST TOWARD E BOSTON GREENWAY. TURN RIGHT ONTO PORTER ST. TURN RIGHT AT THE 1ST CROSS STREET ONTO BREMEN ST. SLIGHT RIGHT ONTO ABBOTT ROAD. TURN RIGHT ONTO WESTBOROUGH ST. TAKE THE ROUTE TO LOGAN AIRPORT. BOSTON MERGE ONTO MA-1A. STAY ON MA-1A. CONTINUE ON MA-1A. KEEP LEFT TO STAY ON I-90 W. KEEP LEFT TO STAY ON I-90 W. TAKE EXIT 11 TOWARD MASSACHUSETTS 122MILBURY/WORCESTER. TURN LEFT ONTO MA-122 INGRAFTON ST. TURN RIGHT ONTO THE US-20 W RAMP. MERGE ONTO US-20 E/SW CUTOFF. TURN RIGHT ONTO WESTBOROUGH ST. CONTINUE ONTO CREEPER HILL RD. THE EXISTING DIRT ACCESS ROAD WILL BE ON THE LEFT.

SITE INFORMATION

SITE NAME: GRAFTON, US-MA-5025
SITE ADDRESS: 104 CREEPER HILL ROAD, GRAFTON, MASSACHUSETTS 01536
JURISDICTION: TOWN OF GRAFTON, WORCESTER COUNTY, MASSACHUSETTS
ZONING: OL-OFFICE LIGHT INDUSTRIAL
TAX ACCOUNT ID: GRAF-000017-000000-00000000A
PARCEL SIZE / COMPOUND SIZE: 662,112 S.F. / 10,000 S.F.
SITE COORDINATES: N 42° 14' 18.47" (NAD 83)
W 71° 43' 42.67" (NAD 83)
GROUND ELEVATION: 382.7± (NAVD 88)
STRUCTURE TYPE: MONOPOLE
STRUCTURE HEIGHT: 180'-0" AGL (TOP OF LIGHTNING ROD)
ANTENNA RAD CENTER: 120'-0" ± AGL
GROUND LANDLORD NAME: TOWN OF GRAFTON
GROUND LANDLORD ADDRESS: 30 PROVIDENCE ROAD, GRAFTON, MASSACHUSETTS 01519
LANDLORD NAME: 750 PARK OF COMMERCE DRIVE, SUITE 200, BOCA RATON, FLORIDA 33487
LANDLORD ADDRESS: 750 PARK OF COMMERCE DRIVE, SUITE 200, BOCA RATON, FLORIDA 33487
APPLICANT: VERTICAL BRIDGE, 750 PARK OF COMMERCE DRIVE, SUITE 200, BOCA RATON, FLORIDA 33487
APPLICANT PHONE: (561) 948-6367

CODE ANALYSIS

BUILDING CODE: IBC 2009
ELECTRICAL CODE: NEC 2014
FIRE CODE: IFC 2009
USE GROUP: U (UTILITY)
CONSTRUCTION TYPE: IIB

PROJECT DESCRIPTION

1. NEW MONOPOLE TO BE INSTALLED
2. NEW 10,000 S.F. TELECOMMUNICATIONS COMPOUND TO BE INSTALLED
3. NEW POWER AND TELCO EQUIPMENT TO BE INSTALLED WITHIN COMPOUND.

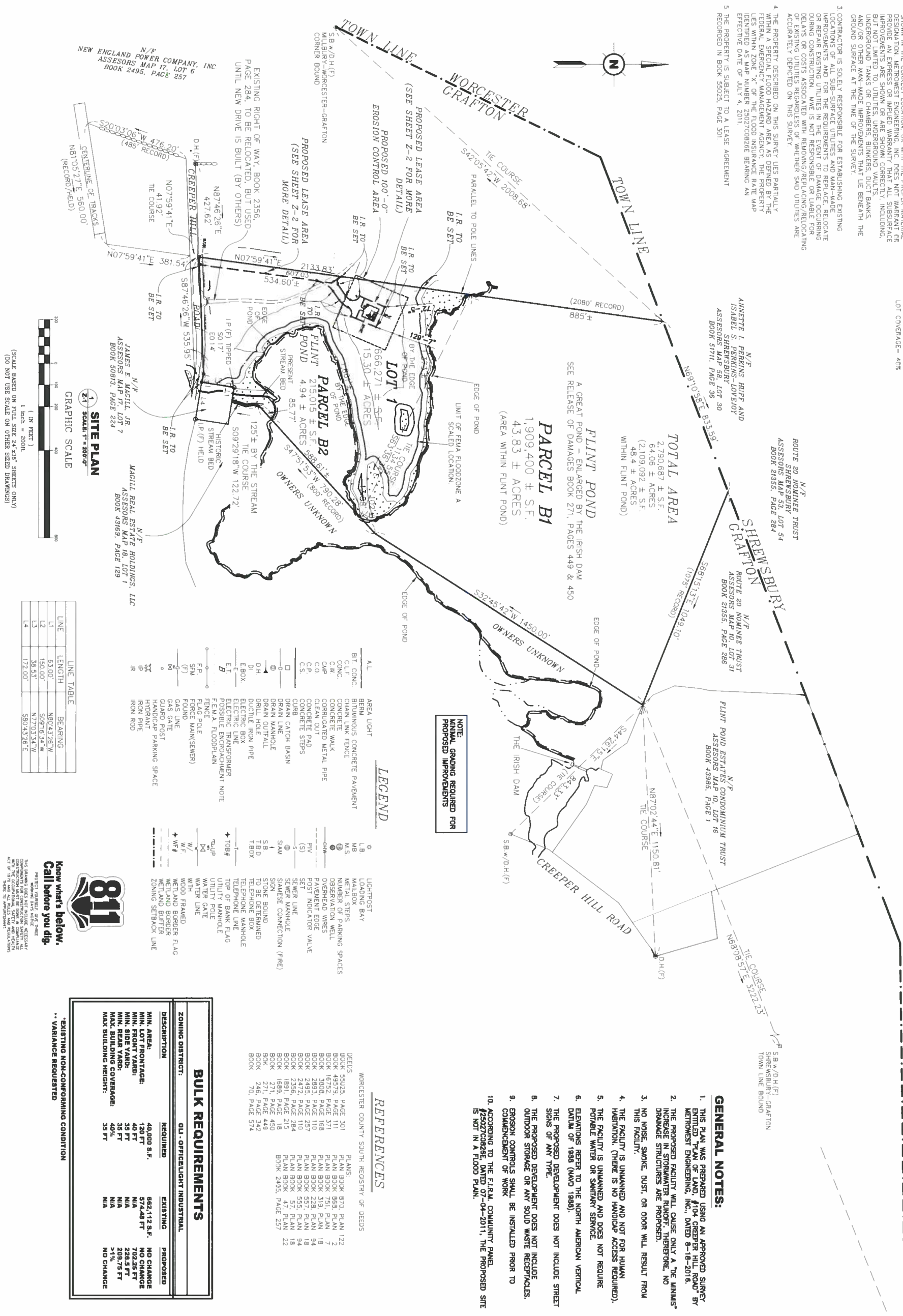
NOTES:

1. SUBJECT UTILITY IS SHOWN AS ASSESSMENTS MAP 17, LOT 08A
RECORD TITLE FPM BOOK 45979, PAGE 111
2. UTILITY LOCATIONS DESCRIBED ON THIS PLAN, BOTH ABOVE- AND
BELOW-GROUND, ARE BASED UPON DIRECT FIELD OBSERVATIONS
MADE BY METROWEST ENGINEERING, INC. PERSONNEL DURING A FIELD
SURVEY. RECORD PLAN LOCATIONS, OR DISGAGE PAINT-INDICATORS,
METROWEST ENGINEERING, INC. DOES NOT WARRANT THAT ALL
LOCATIONS SHOWN ON THIS PLAN ARE ACCURATE. THERE ARE NO
SHOW IN THE CORRECT LOCATION, OR WITH THE PROPER MATERIAL,
DESIGNATION. METROWEST ENGINEERING, INC. DOES NOT WARRANT OR
PROVIDE AN EXPRESS OR IMPLIED WARRANTY THAT ALL SUBSURFACE
IMPROVEMENTS ARE SHOWN OR IMPLIED CORRECTLY, INCLUDING,
BUT NOT LIMITED TO, THE LOCATION, DEPTH, OR NUMBER OF UTILITY
AND/OR OTHER MAN-MADE IMPROVEMENTS THAT LIE BEHIND THE
GROUND SURFACE AT THE TIME OF THE SURVEY.
3. CONTRACTOR IS SOLELY RESPONSIBLE FOR ESTABLISHING EXISTING
LOCATIONS OF ALL SUB-SURFACE UTILITIES AND REMEDYING
OR REPAIR EXISTING UTILITIES IN THE EVENT OF DAMAGE OCCURRING
DURING CONSTRUCTION. MWE IS NOT RESPONSIBLE OR LIABLE FOR
DELAYS OR COSTS ASSOCIATED WITH REMOVING/REPLACING/RELOCATION
OF EXISTING UTILITIES REGARDLESS OF WHETHER SAID UTILITIES ARE
ACCURATELY DEPICTED ON THIS SURVEY.
4. THE PROPERTY DESCRIBED ON THIS SURVEY LIES PARTIALLY
WITHIN A SPECIAL FLOOD HAZARD AREA AS DEFINED BY THE
FEDERAL EMERGENCY MANAGEMENT AGENCY. THE PROPERTY
LIES WITHIN ZONE "X" OF THE FLOOD INSURANCE RATE MAP
IDENTIFIED AS MAP NUMBER 2002070028ZBE BEARING AN
EFFECTIVE DATE OF JULY 4, 2011.
5. THE PROPERTY IS SUBJECT TO A LEASE AGREEMENT
RECORDED IN BOOK 55025, PAGE 301

ZONING:

OLI—OFFICE/LIGHT INDUSTRIAL

ANY ON-RESIDENTIAL USE
MINIMUM AREA= 40,000 SQUARE FEET
MAXIMUM FRONTAGE = 120 FEET
SETBACKS:
FRONT YARD= 40 FEET
SIDE YARD = 35 FEET
REAR YARD= 35 FEET
LOT COVERAGE= 40%



GENERAL NOTES:

1. THIS PLAN WAS PREPARED USING AN APPROVED SURVEY EXEMPTED PLAN OF LAND #104 CREEPER HILL ROAD" BY MENTIMOTH ENGINEERING, INC., DATED 8-18-2016.
2. THE PROPOSED FACILITY WILL CAUSE ONLY A DE MINIMIS INCREASE IN SUBSTANTIAL RAINFALL THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
3. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
4. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
5. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
6. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988).
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE.
8. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEIPTS.
9. EROSION CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK.
10. ACCORDING TO THE F.R.M. COMMUNITY PANEL, #25027C02A88E, DATED 07-04-2011, THE PROPOSED SITE IS NOT IN A FLOOD PLAIN.

REFERENCES

| DEEDS | PLANS |
|----------------------|------------------------------|
| B00K 55025, PAGE 301 | PLAN B00K 802, PLAN B00K 983 |
| B00K 49573, PAGE 371 | PLAN B00K 984, PLAN B00K 985 |
| B00K 16752, PAGE 371 | PLAN B00K 751, PLAN B00K 751 |
| B00K 3808, PAGE 168 | PLAN B00K 319, PLAN B00K 319 |
| B00K 2693, PAGE 168 | PLAN B00K 269, PLAN B00K 269 |
| B00K 2393, PAGE 157 | PLAN B00K 239, PLAN B00K 239 |
| B00K 2472, PAGE 101 | PLAN B00K 555, PLAN B00K 555 |
| B00K 2356, PAGE 284 | PLAN B00K 57, PLAN B00K 57 |
| B00K 1891, PAGE 215 | PLAN B00K 457, PLAN B00K 457 |
| B00K 1689, PAGE 215 | PLAN 2575, PLAN 2575 |
| B00K 1689, PAGE 215 | |
| B00K 271, PAGE 449 | |
| B00K 271, PAGE 449 | |
| B00K 246, PAGE 374 | |
| B00K 70, PAGE 572 | |

BULK REQUIREMENTS

| DESCRIPTION | REQUIRED | EXISTING | PROPOSED |
|-------------------------|-------------|--------------|-----------|
| MIN. LOT: | 40,000 S.F. | 652,112 S.F. | NO CHANGE |
| MIN. FRONTAGE: | 120 FT | 574.48 FT | NO CHANGE |
| MIN. SIDE YARD: | 35 FT | N/A | NO CHANGE |
| MIN. REAR YARD: | 35 FT | N/A | 226.5 FT |
| MAX. BUILDING COVERAGE: | 40% | N/A | 209.75 FT |
| MAX. BUILDING HEIGHT: | 35 FT | N/A | >1% |
| | | | NO CHANGE |

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| SCHEDULE OF REVISIONS | | | |
|-----------------------|----------|----------|-------------------------|
| REV NO. | DATE | DRAWN BY | DESCRIPTION OF REVISION |
| 1 | 08-28-16 | JMC | CLIENT REVISION |
| 2 | 08-29-16 | JMC | CLIENT REVISION |
| 3 | 08-16-16 | LCW | FINAL |
| 4 | 09-28-16 | LCW | FINAL |
| 5 | 10-03-16 | LCW | FINAL ZDR |

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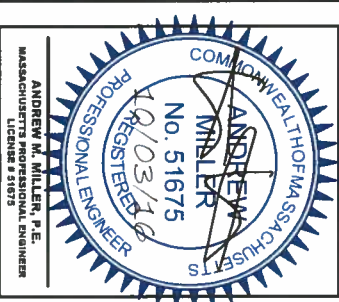
EXPANDED SITE PLAN

DRAWING SHEET:

SHEET NUMBER:
2 OF 7

SITE INFORMATION:
SITE NAME:
US-MA-5025
GRAFTON
SITE ADDRESS:
104 CREEPER HILL ROAD
GRAFTON,
MASSACHUSETTS 01536
ASSESSOR'S MAP:

JURISDICTION:
TOWN OF GRAFTON
WORCESTER COUNTY, MA



verticalbridge
750 PARK OF COMMERCE
DRIVE, SUITE 200
BOCA RATON, FLORIDA 33487
(561) 948-6367



advantage engineers

520 FELLOWSHIP ROAD SUITE A 106
MOUNT LAUREL, NEW JERSEY 08054
PHONE: (856) 231-0800
www.advantageengineers.com

SCHEDULE OF REVISIONS

| REV. NO. | DATE | DRAWN BY | DESCRIPTION OF CHANGES |
|----------|----------|----------|------------------------|
| 1 | 08-28-16 | JMC | CLIENT REVISIONS |
| 2 | 08-29-16 | JMC | CLIENT REVISIONS |
| 3 | 09-16-16 | LCW | FINAL |
| 4 | 09-28-16 | LCW | FINAL |
| 5 | 10-03-16 | LCW | FINAL 209 |

DRAWN BY: LCW

CHECKED BY: TA

SCALE: NOTED

JOB NO: M880140.00

DRAWING TITLE:

SITE
PLAN

DRAWING SHEET:

Z-2

SHEET NUMBER:
3 OF 7

SITE INFORMATION:

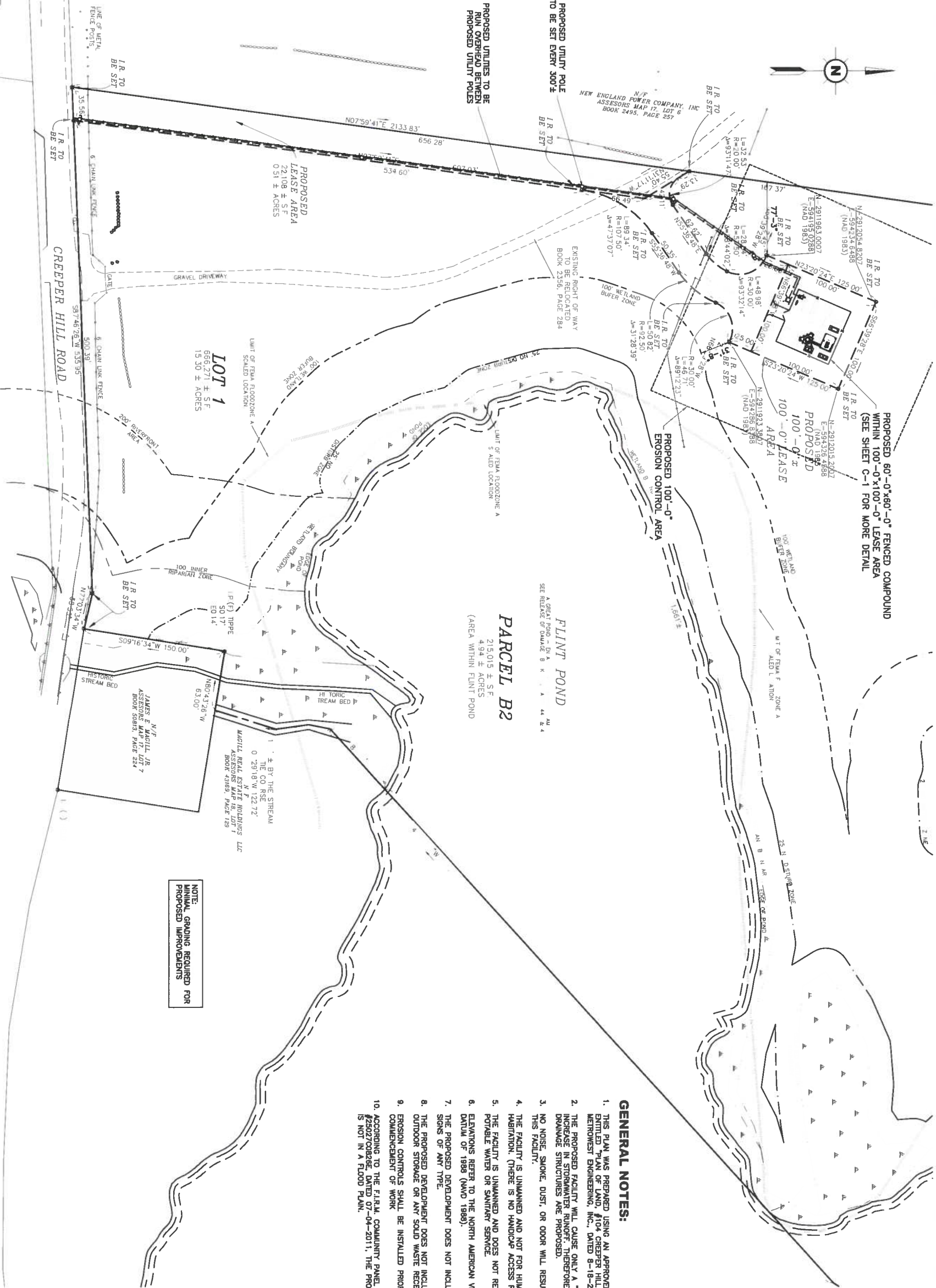
SITE NAME:
US-MA-5025
GRAFTON
SITE ADDRESS:
104 CREEPER HILL ROAD
GRAFTON,
MASSACHUSETTS 01536
ASSESSOR'S MAP:
MAP 17
LOT 08A

JURISDICTION:
TOWN OF GRAFTON
WORCESTER COUNTY, MA

GENERAL NOTES:

1. THIS PLAN WAS PREPARED USING AN APPROVED SURVEY ENTITLED "PLAN OF LAND, #104 CREEPER HILL ROAD" BY METROWEST ENGINEERING, INC., DATED 8-18-2016.
2. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF; THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
3. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
4. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. (THERE IS NO HANDICAP ACCESS REQUIRED).
5. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE PORTABLE WATER OR SANITARY SERVICE.
6. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988).
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE STREET SIGNS OF ANY TYPE.
8. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTEACLES.
9. EROSION CONTROLS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF WORK.
10. ACCORDING TO THE F.I.R.M. COMMUNITY PANEL #25027008266, DATED 07-04-2011, THE PROPOSED SITE IS NOT IN A FLOOD PLAN.

NOTE:
MINIMAL GRADING REQUIRED FOR
PROPOSED IMPROVEMENTS



Know what's below.
Call before you dig.

PROJECT TOPSOIL ONE INCH
THE GRAPHIC SCALE AND THE 811 CALL BEFORE YOU DIG
COMMITMENT TO CONSTRUCTION SAFETY
CALL 811 AT LEAST 48 HOURS BEFORE ANY
ACT OF EXCAVATION, SAFETY AND HEALTH
RISK TO AMERICAN

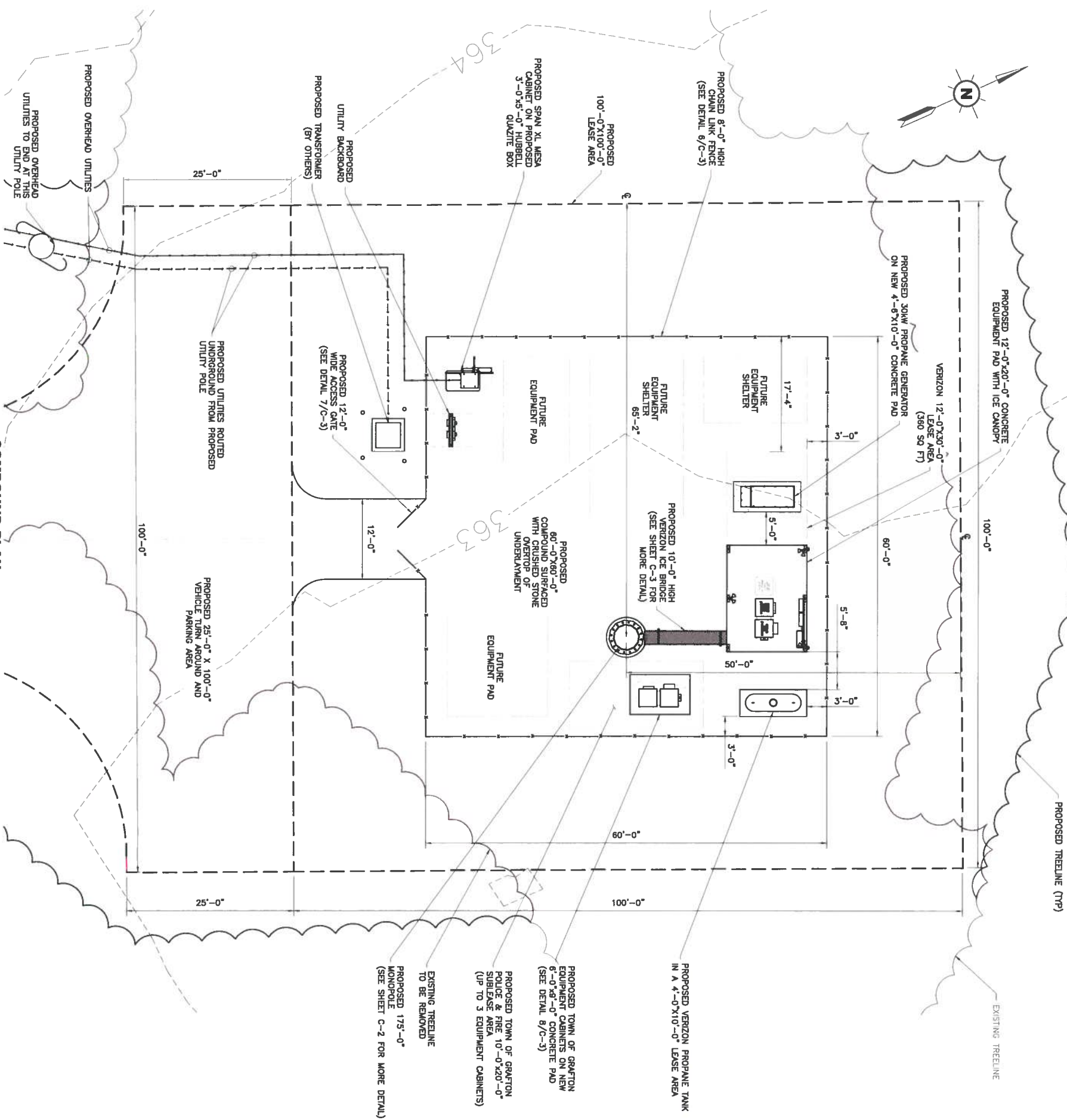
1 SITE PLAN

2 SCALE: 1" = 50'-0"

GRAPHIC SCALE



1 inch = 50ft.
(DO NOT USE SCALE ON OTHER SIZED DRAWINGS)



GENERAL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING IMPROVEMENTS TO COMMENCING CONSTRUCTION. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. THIS PLAN WAS PREPARED USING AN APPROVED PLAN ENTITLED "CELLULAR SURVEY" BY CLARK SURVEYING, DATED 2-18-2016.
8. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF; THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
9. NO NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
10. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (THERE IS NO HANDICAP ACCESS REQUIRED).
11. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE PORTABLE WATER OR SANITARY SERVICE.
12. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.
13. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
14. MOUNTS AND ANTENNAS ARE DESIGNED TO MEET ANSI/TIA-222-G-2 AS PER IBC 2009 REQUIREMENTS.
15. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
16. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
17. IF ANY PILING EXISTS BENEATH THE SITE AREA, CONTRACTOR MUST LOCATE IT AND CONTACT OWNERS REPRESENTATIVE.
18. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS. STRUCTURAL ANALYSIS TO BE PERFORMED BY OTHERS.



**Know what's below.
Call before you dig.**

PROTECT YOURSELF: One Page Morning Daily Notice



advantage engineers

520 FELLOWSHIP ROAD SUITE A-106
MOUNT LAUREL NEW JERSEY 08054
PHONE (856) 231-0800
www.advantageengineers.com

| SCHEDULE OF REVISIONS | | | | |
|-----------------------|----------|-------|------------------------|--|
| REV. NO. | DATE | DRAWN | DESCRIPTION OF CHANGES | |
| 5 | 10-03-16 | LCW | FINAL 2ds | |
| 4 | 09-28-16 | LCW | FINAL | |
| 3 | 08-16-16 | LCW | FINAL | |
| 2 | 08-28-16 | JMC | CLIENT REVISIONS | |
| 1 | 08-28-16 | JMC | CLIENT REVISIONS | |

DRAWN BY:

CHECKED BY:

SCALE:

JOB NO:

DRAWING TITLE:

**COMPOUND
PLAN**

DRAWING SHEET:



SHEET NUMBER:

4 OF 7

SITE INFORMATION:

SILE NAME:
11S-MA-5025

GRAFTON

SITE ADDRESS:

GRAFTON

MASSACHUSETTS

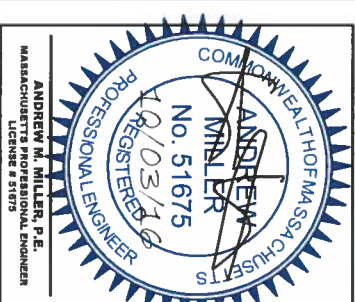
ASSESSOR'S MAP:

MAP 17

LOT 084

JURISDICTION:

WORCESTER COUNTY, MA



ANDREW M. MILLER, P.E.
MASSACHUSETTS PROFESSIONAL ENGINEER
LICENSE # 51679



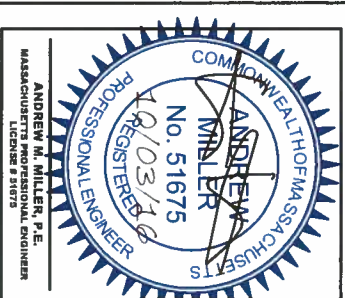
| SCHEDULE OF REVISIONS | | | |
|-----------------------|----------|-------|------------------------|
| 5 | 10-03-18 | LCW | FINAL 2DB |
| 4 | 09-28-18 | LCW | FINAL |
| 3 | 09-18-18 | LCW | FINAL |
| 2 | 08-28-18 | JMC | CLIENT REVISIONS |
| 1 | 08-28-18 | JMC | CLIENT REVISIONS |
| REV NO. | DATE | DRAWN | DESCRIPTION OF CHANGES |

| | |
|-------------|------------|
| DRAWN BY: | LCW |
| CHECKED BY: | TA |
| SCALE: | NOTED |
| JOB NO: | MSB0140.00 |

| | |
|----------------|-----------|
| DRAWING TITLE: | ELEVATION |
| DRAWING SHEET: | C-2 |

| | |
|---------------|--------|
| SHEET NUMBER: | 5 OF 7 |
|---------------|--------|

| | |
|-------------------|--|
| SITE INFORMATION: | SITE NAME: US-MA-5025 GRAFTON SITE ADDRESS: 104 CREEPER HILL ROAD GRAFTON, MASSACHUSETTS 01536 ASSESSOR'S MAP: MAP 17 LOT 08A JURISDICTION: TOWN OF GRAFTON WORCESTER COUNTY, MA |
|-------------------|--|





SCHEDULE OF REVISIONS

| NO. | DATE | DRAWN BY | DESCRIPTION OF CHANGES |
|-----|----------|----------|------------------------|
| 1 | 08-28-16 | JMC | CLIENT REVISIONS |
| 2 | 08-29-16 | JMC | CLIENT REVISIONS |
| 3 | 09-16-16 | LCW | FINAL |
| 4 | 09-28-16 | LCW | FINAL |
| 5 | 10-03-16 | LCW | FINAL 2DB |

DRAWN BY: LCW

CHECKED BY: TA

SCALE: NOTED

JOB NO: M880140.00

DRAWING TITLE:

CONSTRUCTION
DETAILS

DRAWING SHEET:

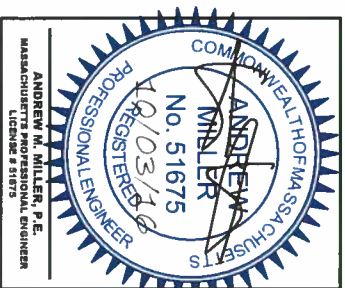
C-3

SHEET NUMBER:
6 OF 7

SITE INFORMATION:

SITE NAME:
US-MA-5025
GRAFTON
SITE ADDRESS:
104 CREEPER HILL ROAD
GRAFTON,
MASSACHUSETTS 01536
ASSESSOR'S MAP:
MAP 17
LOT 08A

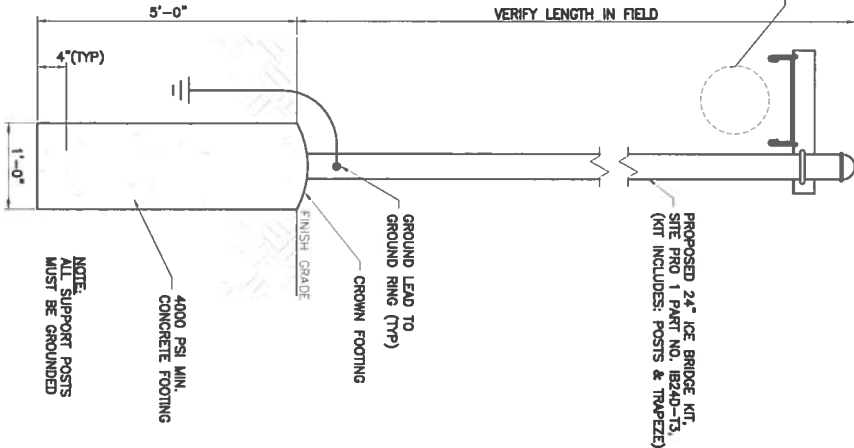
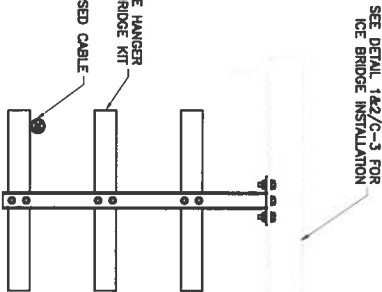
JURISDICTION:
TOWN OF GRAFTON
WORCESTER COUNTY, MA



GENERAL NOTES

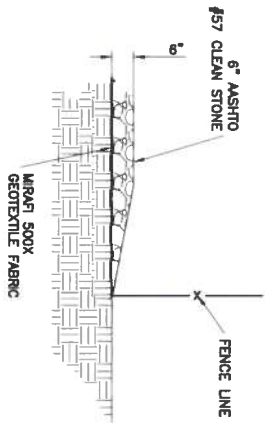
- DESIGN REQUIREMENTS PER INTERNATIONAL BUILDING CODE 2009 AND THE AISI/TIA-222-G-2 STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED BY FIELD MEASUREMENT AND FROM THE EXISTING STRUCTURAL DRAWINGS. THE GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIALS OR PROCEEDING WITH CONSTRUCTION.
- THE GENERAL CONTRACTOR AND HIS CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK.
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISI STANDARD SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN INCLUDING THE COMMENTARY AND THE AISI CODE FOR STANDARD PRACTICE.
- STRUCTURAL STEEL PLATES AND SHAPES SHALL CONFORM TO ASTM A992. ALL STRUCTURAL STEEL PIPES SHALL CONFORM TO ASTM A53 GRADE B. ALL STRUCTURAL STEEL COMPONENTS AND FABRICATED ASSEMBLIES SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
- WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS), STRUCTURAL WELDING CODE - STEEL WELD ELECTRODES SHALL BE E70XX.
- ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO THE STANDARD FOR STEEL COBOL. STRUCTURAL FASTENERS FOR STEEL SUPPORTING STRUCTURES SHALL CONFORM TO THE STANDARD FOR STRUCTURAL STEEL FRAMING. ALL FASTENERS SHALL BE 5/8" INCH MIN. DIAMETER BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN THE SHEAR PLANE. ALL EXPOSED FASTENERS, NUTS AND WASHERS SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. CONCRETE EXPANSION ANCHORS SHALL BE HLH MKK BOLTS UNLESS OTHERWISE NOTED.
- LUMBER (IF APPLICABLE) SHALL COMPLY WITH THE REQUIREMENTS OF AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL LUMBER PRODUCERS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- ALL COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE AS SPECIFIED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DETAILS. THE CONTRACTOR SHALL VERIFY THE EQUIPMENT IS AS SPECIFIED AND REQUIRED TO SECURE THE CABLES. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL MUNICIPAL CONTRACTOR BUSINESS LICENSES.

PROPOSED CABLE HANGER

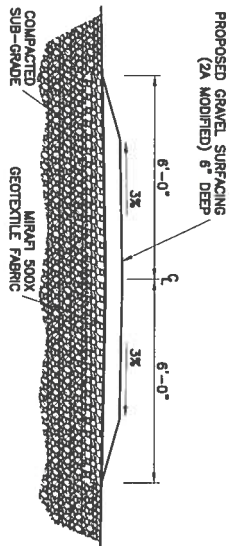


PROPOSED ICE BRIDGE DETAIL

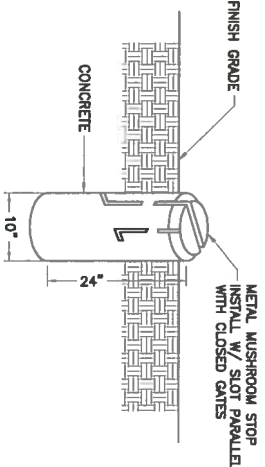
NOTE:
ALL SUPPORT POSTS
MUST BE GROUNDED



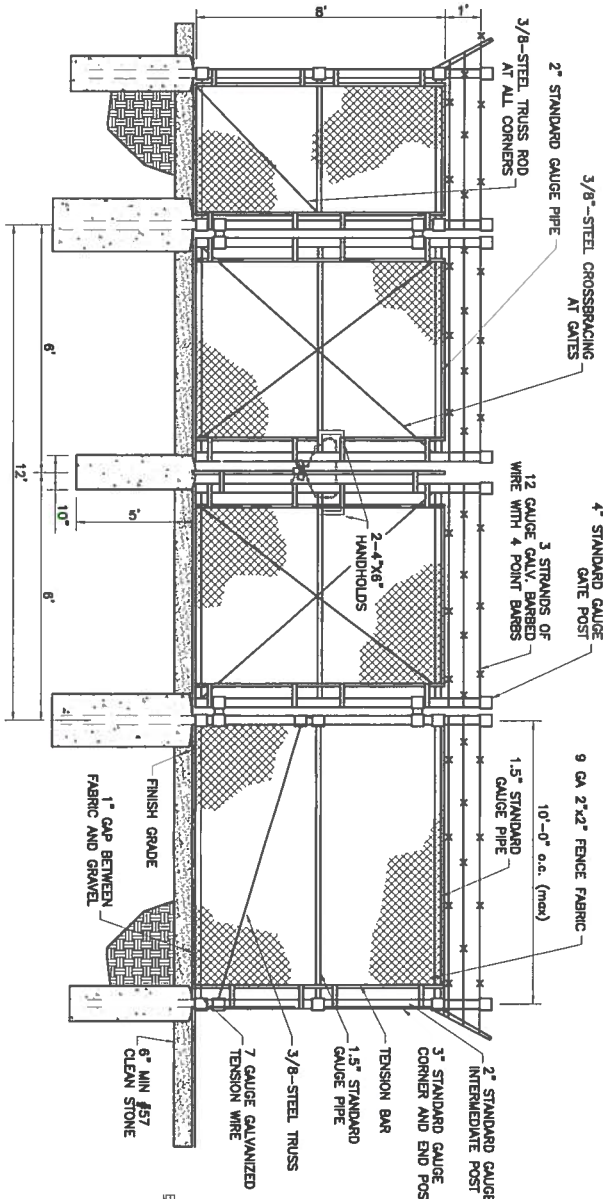
GRAVEL COMPOUND DETAIL



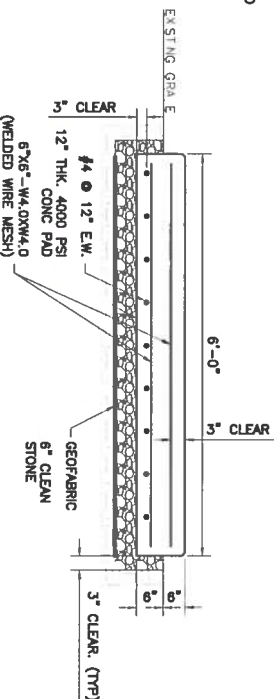
GRAVEL DRIVEWAY TYPICAL SECTION



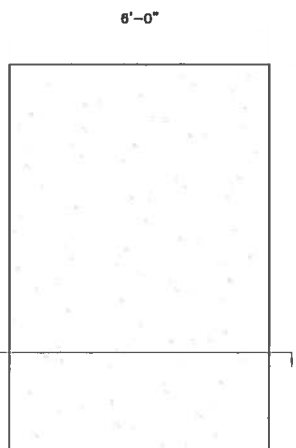
MUSHROOM STOP DETAIL



TYPICAL FENCE AND GATE DETAIL



CONCRETE PAD PLAN



- NOTES
- ALL FILL/BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D1557).
 - ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH (FC') OF 4000 PSI. CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACI 308.1R-11. ALL CONCRETE SHALL BE PROTECTED FROM WEATHERING BY A WEATHER RESISTANT FINISH. WEATHER RESISTANT FINISH SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. WEATHER RESISTANT FINISH SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES. WEATHER RESISTANT FINISH SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES.
 - PROVIDE 3'-0" #2 ANG COPPER PIGTAIL CAD-WELDED TO LONGEST REBAR MEMBER STUBBED OUT 6" BELOW FINISHED GRADE FOR CONNECTION TO ELECTRICAL GROUNDING SYSTEM.

CONCRETE PAD SECTION

ELECTRICAL NOTES:

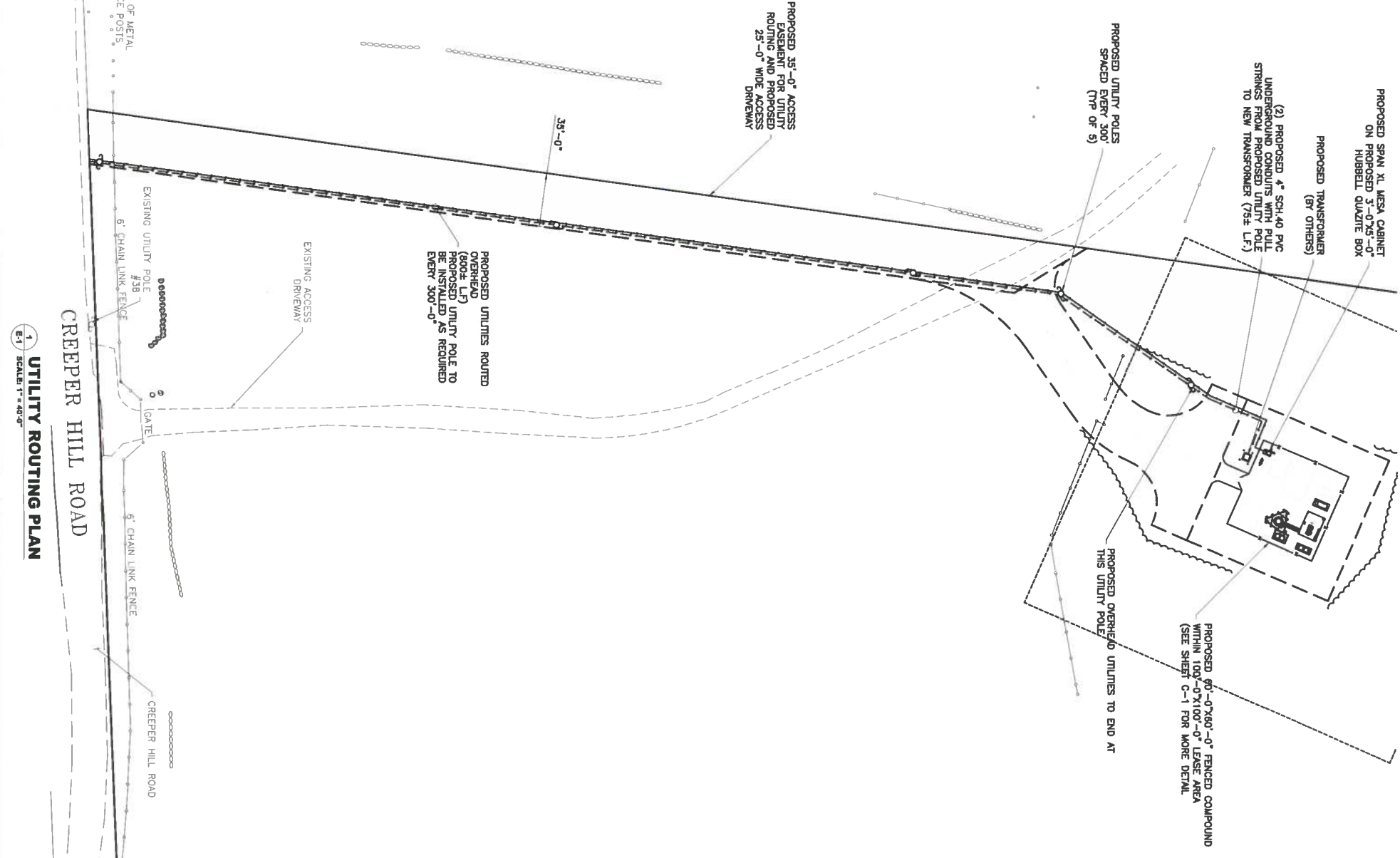
1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTORS FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE SHOULD BE SUBMITTED TO THE PROJECT MANAGER PRIOR TO THE BID CLOSURE. THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO ROUGH-IN.
3. THE CONDUIT RUNS AS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATION AND ROUTING SHALL BE PER EXISTING FIELD CONDITIONS.
4. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR REQUIRED BY NEC.
5. ALL CONDUITS SHALL BE MET WITH BENDS MADE IN ACCORDANCE WITH NEC CHAPTER 9, TABLE #2. NO RIGHT ANGLE DEVICES OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
6. ALL CONDUIT TERMINATIONS SHALL BE PROVIDED WITH PLASTIC THROAT INSULATING GROUNDING BUSHINGS.
7. ALL WIRE SHALL BE TYPE THHN/THWN, SOLID, ANNEALED COPPER, UP TO SIZE #10 AWG (#8 AND LARGER SHALL BE CONCENTRIC STRANDED) 75°C (167°F), 98% CONDUCTIVITY, MINIMUM #12.
8. ALL WIRES SHALL BE TAGGED AT ALL PULL BOXES, J-BOXES, EQUIPMENT BOXES AND CABINETS WITH APPROVED PLASTIC TAGS, ACTION CARD, BRADY, OR APPROVED EQUAL.
9. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
10. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION TO CONFLICTS. VERIFY WITH MECHANICAL CONTRACTOR AND COMPLY AS REQUIRED.
11. ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN NOT HAND WRITTEN.
12. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, STARTERS, AND EQUIPMENT CABINETS.
13. THE CONTRACTOR SHALL PREPARE AS-BUILT DRAWINGS, DOCUMENT ANY AND ALL WIRING AND EQUIPMENT CONDITIONS AND CHANGES WHILE COMPLETING THIS CONTRACT. SUBMIT AT SUBSTANTIAL COMPLETION.
14. ALL DISCONNECT SWITCHES AND OTHER CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMINATED MATERIALS INDICATING EQUIPMENT IDENTIFIED, BRAND NAMES INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM (NO EXCEPTIONS).
15. ALL ELECTRICAL DEVICES AND INSTALLATIONS OF THE DEVICES SHALL COMPLY WITH (ADA) AMERICANS WITH DISABILITIES ACT AS ADOPTED BY THE APPLICABLE STATE.
16. PROMOTE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT CONSTRUCTION MANAGERS APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL, WHICH SHALL MAINTAIN THE FIRE RATING OF THE WALL OR STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE, FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.
17. ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT (NEW AND EXISTING) SHALL BE FIELD VERIFIED WITH THE OWNER'S REPRESENTATIVE AND EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN OF CONDUIT AND WIRE. ALL EQUIPMENT SHALL BE PROPERLY CONNECTED ACCORDING TO THE MANUFACTURE DATA FURNISHED ON THE EQUIPMENT (THE DESIGN OF THESE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN AND SOME EQUIPMENT MANUFACTURERS MAY VARY FROM DESIGN AS SHOWN ON THESE DRAWINGS) LOCATION OF ALL OUTLET BOXES, EQUIPMENT AND THE TYPE OF CONNECTION (PULG OR DIRECT) SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.

ELECTRICAL & GROUND SYMBOLS:

- GROUND ROD WITH ACCESS
- XT GROUND ROD
- 5/8"x10"-0" GALVANIZED GROUND ROD
- DISCONNECT SWITCH
- METER ON METER/BREAKER UNIT
- CIRCUIT BREAKER
- GENERATOR
- MECHANICAL TYPE CONNECTION
- CADWELD TYPE CONNECTION
- GROUNDING WIRE
- CB INTERLOCKING MECHANISM
- POWER WIRE/CONDUIT
- TELEO FIBER/CONDUIT

ABBREVIATIONS:

- AWG AMERICAN WIRE GAUGE
- BCTW BARE COPPER TINNED WIRE
- GPS GLOBAL POSITIONING SYSTEM
- PCS PERSONAL COMMUNICATION SYSTEM
- PPC POWER PROTECTION CABINET
- PVC POLYVINYL CHLORIDE
- RAC RIGID ALUMINUM CONDUIT
- RGS RIGID GALVANIZED STEEL
- EAT ELECTRICAL METALLIC TUBING
- DWG DRAWING
- INTG INTERIOR GROUND RING (MIL) FOR
- MACA METAL ARMORED CABLE ASSEMBLY
- MACB METAL ARMORED CABLE BARE
- CIBRE COAXIAL ISOLATED GROUND BARE
- GEN GENERATOR
- GR GROUND
- SCW STRANDED INSULATED COPPER WIRE



ELECTRICAL NOTE:

PER N.E.C. ARTICLE 358.28 BENDS - NUMBER IN ONE RUN, THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) BETWEEN PULL POINTS, FOR EXAMPLE, CONDUIT BODIES AND BOXES. NOTE: CONTRACTOR SHALL PROVIDE AND INSTALL ANY/ALL JUNCTION BOXES SIZED IN ACCORDANCE WITH N.E.C. GUIDELINES AS REQUIRED FOR THE INSTALLATION.

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SCHEDULE OF REVISIONS

| NO. | DATE | DRAWN | DESCRIPTION OF CHANGES |
|-----|----------|-------|------------------------|
| 1 | 08-28-16 | JMC | CLIENT REVISIONS |
| 2 | 08-28-16 | JMC | CLIENT REVISIONS |
| 3 | 08-16-16 | LCW | FINAL |
| 4 | 08-26-16 | LCW | FINAL |
| 5 | 10-03-16 | LCW | FINAL 2DS |

DRAWN BY: LCW

CHECKED BY: TA

SCALE: NOTED

JOB NO: M880140.00

DRAWING TITLE:

UTILITY
ROUTING PLAN
& NOTES

DRAWING SHEET:

E-1

SHEET NUMBER:
7 OF 7

SITE INFORMATION:

SITE NAME:
US-MA-5025
GRAFTON
SITE ADDRESS:
104 CREEPER HILL ROAD
GRAFTON,
MASSACHUSETTS 01536
ASSESSOR'S MAP:
MAP 17
LOT 08A

JURISDICTION:
TOWN OF GRAFTON
WORCESTER COUNTY, MA

